User Manual

TesiMon Touch Monitor TM1700

Part Number:	80 860.586
Version:	1
Date:	15 June 2004
Valid for:	TM1700

SÜTRON ELECTRONIC GMBH

Version	Date	Modifications
1	15 June 2004	First Edition

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1 Important Notes

1.1 Symbols

The symbols in this manual are used to draw your attention on notes and dangers.

1.1.1 General Symbols

Danger
This symbol is used to refer to instructions which, if ignored or not carefully followed could result in personal injury.

Note
This symbol indicates application tips or supplementary notes.

Reference to source of information
This symbol refers to detailed sources of information on the current topic.

1.1.2 Specific Symbols

The following symbols indicate specific dangers which could result in damage to equipment or personal injury or even up to the death of the operator.

Danger - Electric Shock

Danger - Corrosive

Danger - Toxic

Danger - Explosive

Danger - Fire

Danger - Infrared Light

Danger - Electrostatic Charge

1.2 Safety Notes

- Read this manual carefully before using the operating device. Keep this manual in a place where it is always accessible to all users.
- Proper transportation, handling and storage, placement and installation of this product are prerequisites for its subsequent flawless and safe operation.
- This user manual contains the most important information for the safe operation of the device.
- The user manual, in particular the safety notes, must be observed by all personnel working with the device.
- Observe the accident prevention rules and regulations that apply to the operating site.
- Installation and operation must only be carried out by qualified and trained personnel.

1.3 Intended Use

- The device is designed for use in the industry.
- The device is state-of-the art and has been built to the latest standard safety requirements. However, dangerous situations or damage to the machine itself or other property can arise from the use of this device.
- The device fulfills the requirements of the EMC directives and harmonized European standards. Any modifications to the system can influence the EMC behavior.

1.4 Target Group

All configuration, programming, installation, commissioning, operating and maintenance work in connection with the automation system must be performed by trained personnel only (e.g. qualified electricians, electrical engineers, etc.).

The configuration and programming personnel must be familiar with the safety concepts of automation technology.

The operating personnel must have been trained in handling the controller and be familiar with the operating instructions.

The installation, commissioning and maintenance personnel must have an education which entitles them to work on automation systems.

2 Installation and Commissioning

2.1 Unpacking the Device

Unpack all parts carefully and check the contents for any visible damage in transit. Also check whether the shipment matches the specifications on your delivery note.

If you notice damages in transit or discrepancies, please contact our sales department immediately.

2.2 Mounting the Device

When installing the operating device, keep a minimum clearance of 30 mm (1.181") around the operating device to ensure adequate air circulation.

When the operating device is installed horizontally, please note that additional sources of heat beneath the operating device may result in heat accumulation.
Make sure to allow sufficient heat dissipation!
Comply with the allowable temperature range listed in the technical data for the use of the operating device!

To maintain the specified degree of protection, make sure the seal is evenly seated on the installation surface and the hexagon nuts are tightened uniformly.
Ensure that the maximum torque of 1.2 Nm is not exceeded.

The operating device can be easily and quickly mounted from the rear of the operating device. This is particularly recommended for mounting in switchboards with a plate thickness of approx. 1 mm to 8 mm (0.039" to 0.315").

1. Insert the operating device from the front through the mounting cutout.
2. Fasten the operating device using hexagon nuts.

2.2.1 Front Panel Dimensions

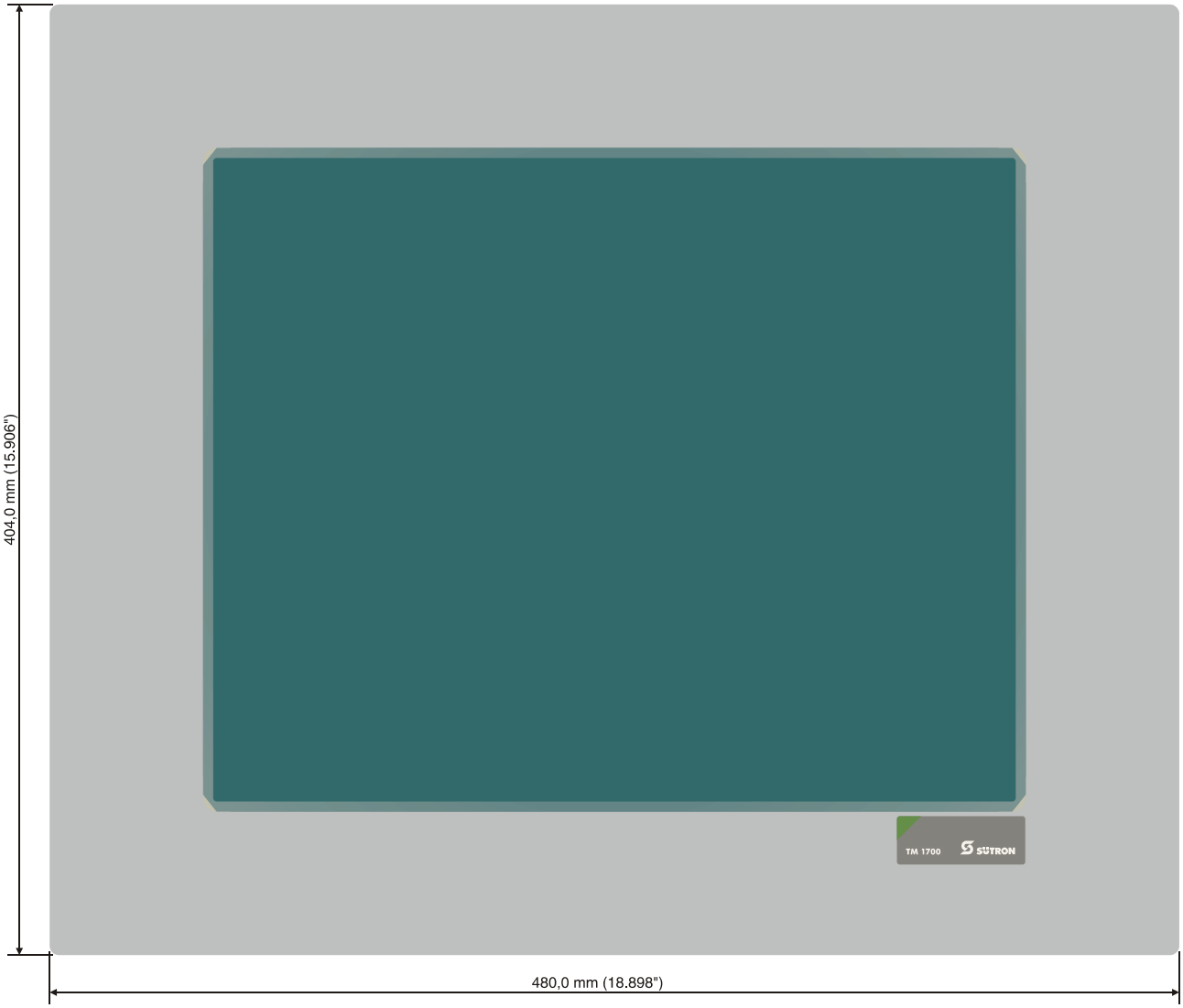

Figure 2-1 Front panel dimensions

2.2.2 Mounting Cutout

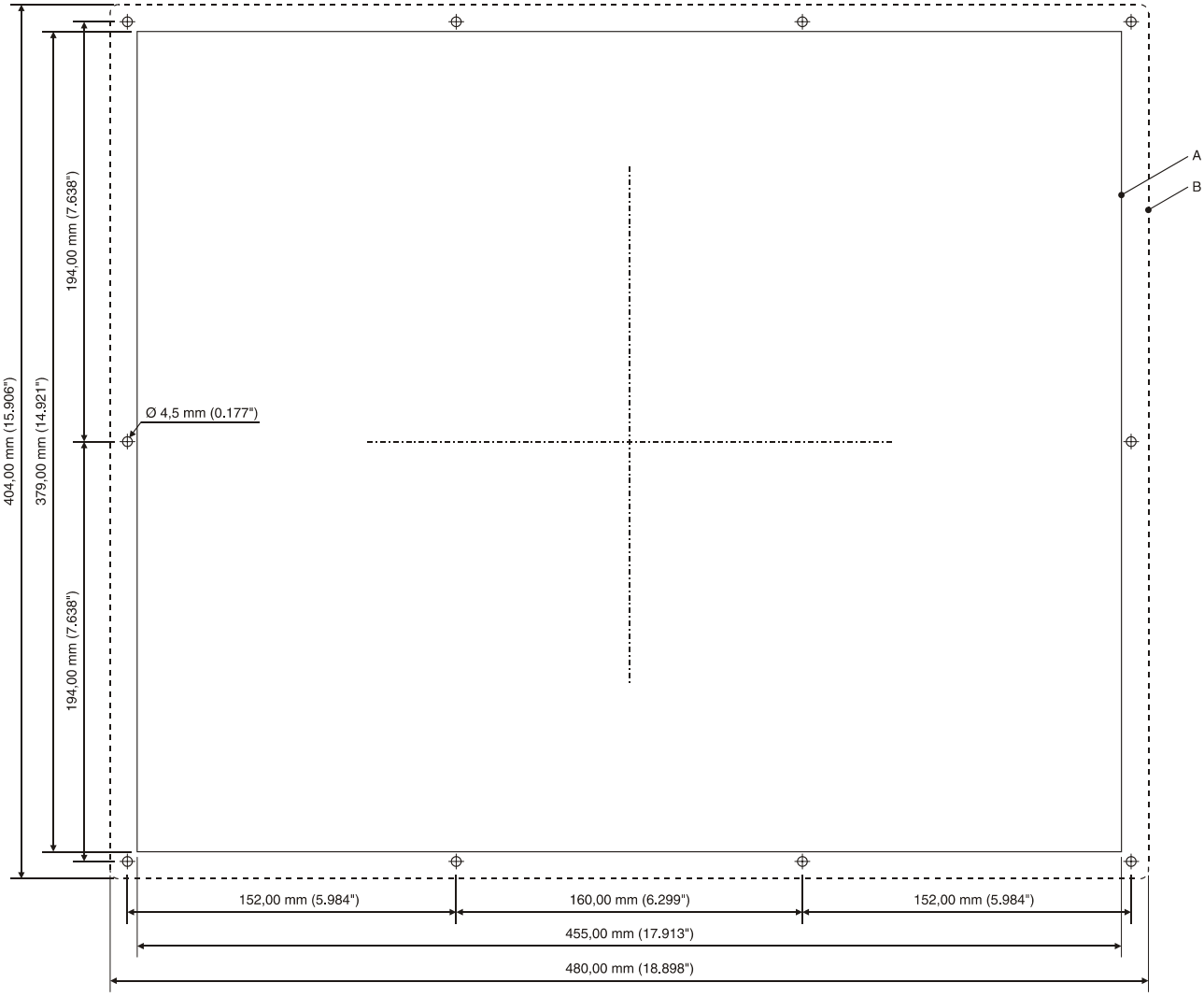

Figure 2-2 Mounting cutout

A Mounting Cutout

B Front Panel

2.2.3 Side View, Mounting Depth

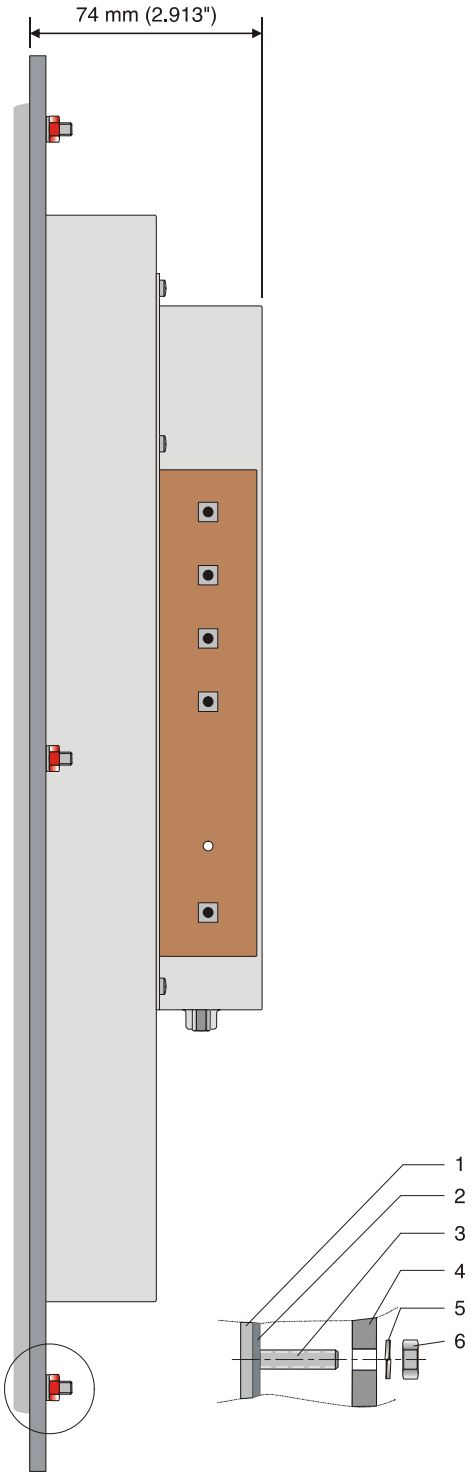

Figure 2-3 Side view and mounting depth for the standard device

1 Front Panel
2 Circumferential Seal
3 Press-in Threaded Bolt M4 x 18 mm (0.709")
4 Mounting Surface Thickness 1 mm to 8 mm (0.039" to 0.315")
5 Spring Lock Washer B4 DIN 127 Form B (not supplied)
6 Nut M4 DIN 934 (not supplied)

2.3 Connecting the Device

2.3.1 Touch Screen (Option) and VGA

Make sure that your PC and monitor are disconnected from the supply voltage.

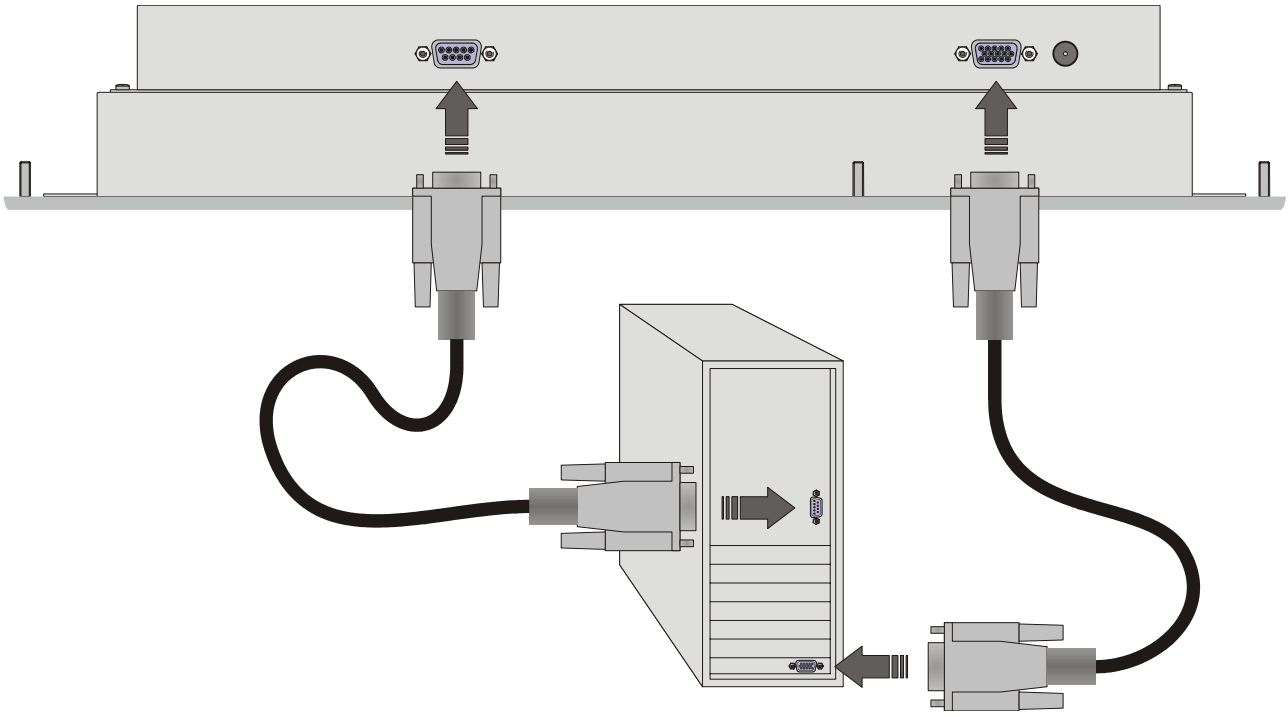

Figure 2-4 Connecting the touch screen and VGA

1. Connect the male connector of the touch screen cable with the 9-pin touch screen interface and fasten the connector using the knurled screws.
2. Connect the female connector of the touch screen cable with the serial interface (COM) of your PC and fasten the connector using the knurled screws.
3. Connect the VGA cable with the 15-pin female connector of the graphics card of your PC and fasten the connector using the knurled screws.
4. Connect the other end of the VGA cable with the 15-pin VGA interface of the monitor and fasten the connector using the knurled screws.

2.3.2 Supply Voltage 100 - 240 V

Hazardous voltages can exist inside electrical installations that can pose a danger to humans. Coming in contact with live parts may result in **electric shock!**

Use a properly grounded power cable. The power cable must be approved by the country where used.

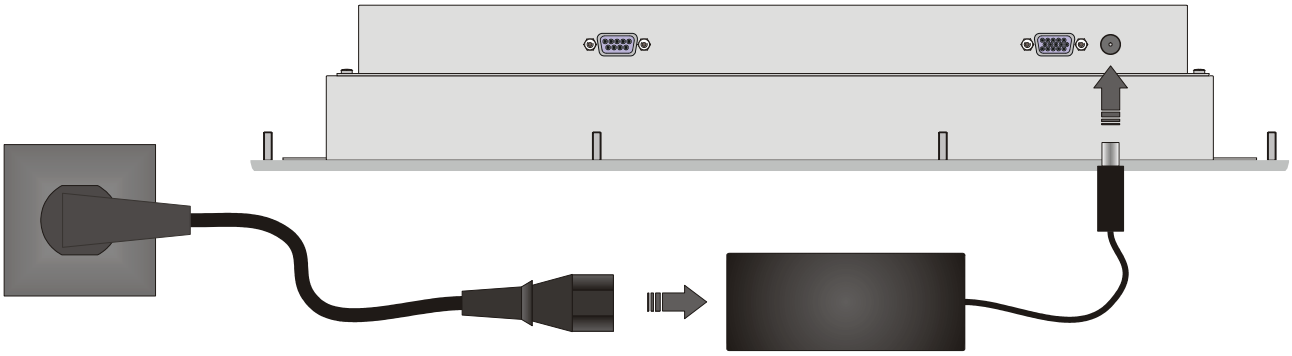

Figure 2-5 Connecting the supply voltage

Do the following to connect the device to the supply voltage:

1. Connect the power supply unit with the female connector on the device.
2. Plug the power cable into the power supply unit.
3. Connect the power cable with the mains power supply.

2.4 Power-up

After applying the supply voltage, the monitor displays the message "NO SIGNAL INPUT" (status-LED lights up yellow) or the monitor is inactive (status-LED is off).

1. If the monitor is not active, turn it on.
2. Switch the PC on.

The status-LED changes to green. If the status-LED remains yellow or if the monitor displays the message "NO SIGNAL INPUT", check whether the VGA cable is correctly connected and the PC is switched on.

2.5 Identification

The nameplate on the back of the device allows you to identify the device. This is where you find the serial number of the monitor.

3 Control and Display Elements

A number of operating and display elements are located on the side of the monitor.

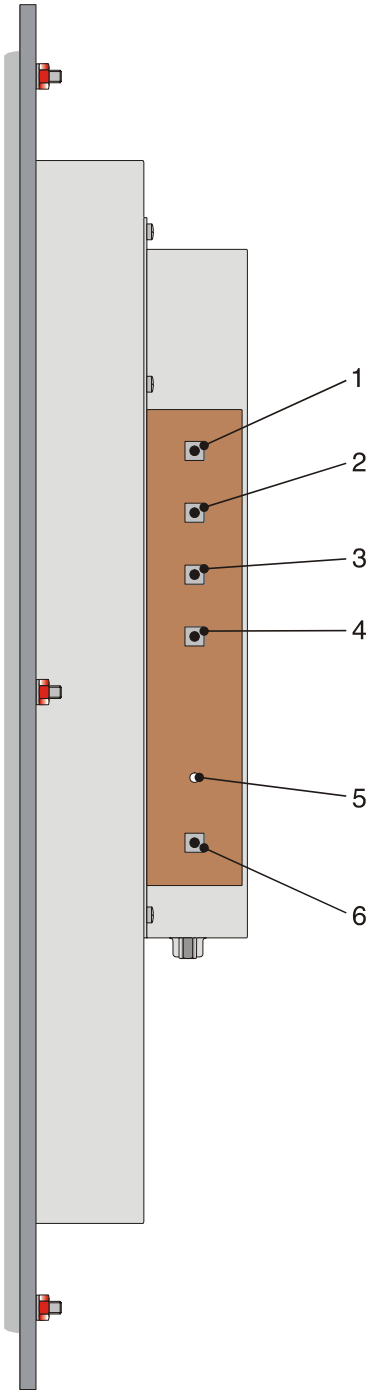

Figure 3-1 Operating Elements

1. Key -
2. Key +
3. Key "Down"
4. Key "Up"
5. Status-LED
6. On/Off Switch

3.1 OSD / Power Keys

The On Screen Display (OSD) keys allow you to adjust settings such as the brightness, contrast, H-/V-position etc. using a menu displayed on the monitor. The OSD keys are located on the side of the monitor.

To activate the OSD menu, press any OSD key.

You can use this key to change the values of the current option.
Within the menus, use this key to select a menu item or to change the values of the current option.

Pressing this key once activates the contrast setting option.
Within the menus, use this key to select a menu item or to change the values of the current option.

Pressing this key once activates the brightness setting option.
Within the menus, this key is used for navigating.

Pressing this key once activates the OSD menu.
Within the menus, this key is used for navigating.

Use this key to switch the monitor on or off.

3.2 Status-LED

The status-LED on the side of the monitor has the following functions:

Table 3-1 Status-LED functions

Color	State	Description
Green	On	Monitor is Ready for Operation
Yel-low	On	No Signal Check if the VGA Cable is Properly Connected or if the PC has been Switched on.
	Off	Monitor is Switched off or has no Supply Voltage. Make sure that the Monitor is Switched on and that the Cables for the Supply Voltage are Connected.

3.3 Touch Screen

The device is equipped with a resistive touch screen. You operate the device using this touch screen.

3.3.1 Installing the Touch Screen Driver

1. Insert the driver CD into the CD-ROM drive.
2. If the driver CD does not start automatically, carry out steps 3 - 5. Otherwise continue with step 6.
3. Select the "Run" command from the "Start" menu.
4. Select "Browse" and select the EloCD.exe file from the driver CD by selecting "Open".
5. Press OK to start the driver CD.
6. Select "Install Driver For This Computer".
7. Select "Install Serial Driver" to start the installation.
8. In the dialog that appears, select "Next" to proceed with the installation.
9. Accept the license agreement by choosing "Yes".
10. Select the serial port to which you connected the monitor and select "Next".
11. Select "Finish" to complete the installation.

The PC reboots.

3.3.2 Calibrating the Touch Screen

After installing the touch screen driver you need to calibrate the touch screen.

1. From the "Start" menu, select "Settings" and then "Control Panel".
2. Double-tap "Elo Touchscreen".
3. In the "General" tab, tap "Align...".
4. Calibrate the touch screen by tapping the marked spots one by one.

When finished, you have 30 seconds to test your calibration.

5. Select "Yes" if you are satisfied with your calibration. Otherwise select "No" to restart the calibration process.

3.4 Display

Danger - Toxic!
If the display is damaged, avoid touching, swallowing or breathing in the liquids or gases which may leak out!

Danger - Corrosive!
If the display is damaged, avoid touching, swallowing or breathing in the liquids or gases which may leak out!

Your graphics card must support one of the display modes specified in the table.

Table 3-2 Display modes

Resolution	Type	Monitor Frequency (Hz)
640 x 350	VGA	70
720 x 400	VGA	70
640 x 480	VGA	60
640 x 480	VESA72	72
640 x 480	VESA75	75
800 x 600	SVGA	56
800 x 600	SVGA	60
800 x 600	VESA72	72
800 x 600	VESA75	75
1024 x 768	VESA60	60
1024 x 768	VESA70	70
1024 x 768	VESA75	75
1152 x 864	VESA	75
1280 x 960	VESA	60
1280 x 1024	VESA	60
1280 x 1024	VESA	75

4 Interfaces of the Device

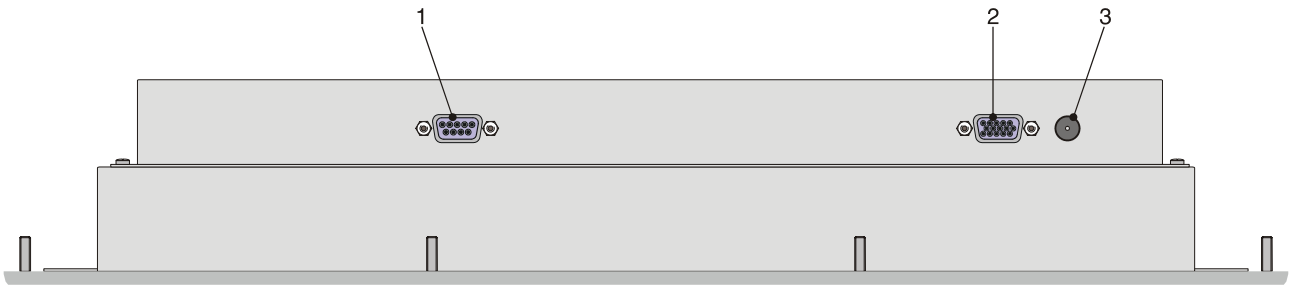

Figure 4-1 Rear view

1. Female Connector (Touch Screen)
2. Female Connector (VGA)
3. Female Connector (Supply Voltage)

4.1 Pin Assignment

Connector in the operating device: 9-pin D-SUB female connector

Table 4-1 Pin assignment - touch screen

Pin	Designation	Function
1	-	Not Connected
2	RD	Received Data
3	TD	Transmitted Data
4	-	Not Connected
5	GND	Ground
6	-	Not Connected
7	-	Not Connected
8	-	Not Connected
9	-	Not Connected

The D-SUB connector strips must be shielded sufficiently.
See chapter “Shielding D-SUB Connectors“ on page 4-2.

Connector in the operating device: 15-pin D-SUB female connector

Table 4-2 Pin assignment - VGA

Pin	Designation	Function
1	Red	Analog Red
2	Green	Analog Green
3	Blue	Analog Blue
4	nc	Not Connected

Table 4-2 Pin assignment - VGA

Pin	Designation	Function
5	GND	Ground
6	GND	Ground
7	GND	Ground
8	GND	Ground
9	VGA 5V	VCC, Fused
10	GND	Ground
11	nc	Not Connected
12	VGA SDA	DDC Data
13	CRTHS	Analog HSYNC
14	CRTVS	Analog VSYNC
15	VGA SCL	DDC Clock

4.2 Shielding D-SUB Connectors

You must shield D-SUB connectors as follows:

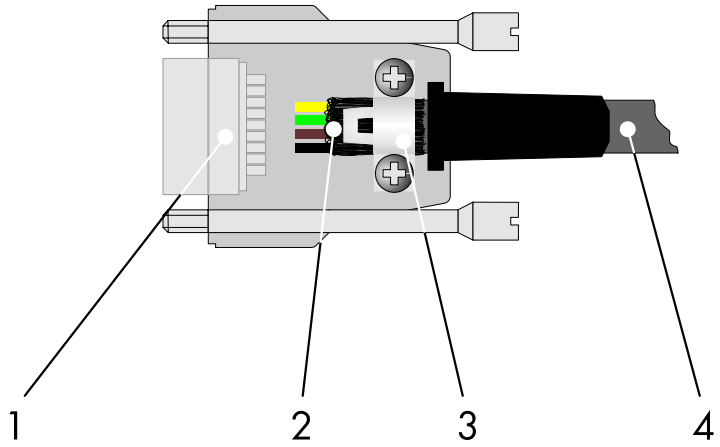

Figure 4-2 Shielding D-SUB connectors

1 D-SUB connector
2 Shield
3 Cable clip
4 Cable

The shield must be folded back into a flat position over the cable sheath.

When fastening the cable with the cable clip, as much of the shielding as possible must be in contact with the housing and sufficient strain relieve must be ensured.

5 Maintenance and Servicing

5.1 Front Panel

You should use a damp cloth only to remove any dirt from the panel.

6 Technical Data

Display	
Type	TFT (Color)
Resolution	Max. 1280 x 1024 Pixels
Colors	16.7 Million
Contrast Ratio	350:1
Brightness	250 cd/m²
Response Time	40 ms
Display Area (H x W)	270.3 mm x 337.9 mm (10.642" x 13.303")

Touch Screen	
Type	Resistive

Electrical Data	
Supply Voltage	100 V - 240 V AC via Mains Adapter
Power Consumption	4.0 A (without Mains Adapter)

Connection System
D-SUB Female and Male Connector Strips, 9 Pin and 15 Pin
Low-Voltage Male Connector and Low-Voltage Female Connector (Outside Diameter 5.5 mm (0.217"), Inside Diameter 2.1 mm (0.083"))

Environmental Conditions	
Operation	5 °C to 40 °C (41 °F to 104 °F)
Storage, Transportation	-20 °C to +60 °C (-4 °F to +140 °F)
Relative Air Humidity for Operation and Storage	5% to 90%, Non-Condensing

Standards and Guidelines	
Interference Immunity	EN 50082 Part 1
Emitted Interference	EN 50081 Part 1

Standards and Guidelines	
Low-Voltage Directive	73/23/EEC
Electromagnetic Compatibility	89/336/EEC
Safety requirements for information technology equipment	EN 60950

Enclosure and Front Panel	
Enclosure	Sheet Steel
Front Panel	Aluminum, Varnished 404 mm x 480 mm x 4 mm (H x W x D), (15.906" x 18.898" x 0.157")
Seal	Circumferential Rubber Seal on the Rear
Mounting Cutout	379 mm x 455 mm (H x W), (14.921" x 17.913")
Mounting Depth	Approx. 74 mm (2.913")
Degree of Protection	At the Front: IP65 Rear: IP20
Total Weight	Approx. 5.4 kg

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